AZ710
Upconverter
Azimuth Product Family

AZIMUTH SERIES

Description

The AZ710 is a high performance frequency upconverter designed for a wide range of broadcast, telco and IP satellite applications. The AZ710 offers advanced and unique features such as a calibrated high linearity over the entire bandwidth combined with a very high frequency stability. These features make the AZ710 the perfect solution for a wide range of transmissions ranging from very small carriers to full transponder applications.

In its default configuration, the AZ710 converts IF to L-band signals. The IF input frequency is switchable between 70MHz and 140MHz. The L-band output frequency ranges from 950MHz up to 1750MHz in steps of 48Hz. Optionally, the AZ710 can be delivered with a C, Ku or DBS-band with an L-band monitoring output.

The high output frequency stability is provided by an internal 10 MHz reference clock. For applications requiring a very high frequency stability such as very low data rate carriers, an optional reference clock of 0,01ppm can be ordered separately.

A DC power supply and a reference frequency on the L-band output are also available as options, providing a compact and cost effective solution when the AZ710 is used in combination with an outdoor RF upconverter and/or amplifier.

The AZ710 is easy to operate and monitor. All control and monitoring parameters are available locally on the front panel and remotely through a web interface. It is also possible to control or monitor the AZ710 via RMCP or SNMP.

Key features

- Agile IF to L-band up-converter
- Optional up-conversion to C, Ku or DBS-band
- Ultra fine L-band frequency resolution (48Hz)
- IF input frequency switchable between 70 MHZ & 140 MHz
- Switchable spectrum inversion
- Very high frequency stability
- Very low spurious characteristics
- Phase noise compliant with Intelsat IBS/ Eutelsat SMS
- High linearity over the entire bandwidth
- Optional 10 MHz + 24Vdc for BUC

Main advantages

- Highest signal quality
- Extensive coverage of all transponder frequencies
- High flexibility

Applications

- Earth Stations
- DTH uplinks
- DSNG uplinks
- Telco and trunking satellite infrastructures
- VSAT hubs
- Generic satcom applications

Related products

AZ720 Downconverter
AZ730 Up-Down converter
AZ740 Indoor L-band Block Upconverter
AZ750 L-band Combiner

AZ270 1+1 Frequency Converter Redundancy Switch
AZ200 Universal Switching System

Related documents

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Care Pack Brochure

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Digisat International Inc.
4195 W. New Haven Ave., Suite 15
Melbourne, FL 32904
USA
+1-321-676-5250
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http://www.digisat.org

Specifications – AZ710(R6)

Interfaces

Input Interface (IF):

- Connector: BNC (F), 50 ohms
- Return loss: >15dB
- Frequency range: 70 MHz +/- 18MHz; 140 MHz +/- 36 MHz
- Input level IF (typical): -35 to +5 dBm

Output Interface (L-band):

- Connector: SMA (F), 50 ohms
- Return loss: >15dB
- Frequency range: 950 to 1750 MHz
- Frequency step size: 48 Hz
- Output level: -30 to +10 dBm

Output Interface (RF) (optional) :

- Connector RF-band out: SMA (F), 50 ohms
- Return loss: >12dB
- Output level C & Ku-band: >0 dBm
- Output level DBS-band: >+10 dBm
- Connector L-band monitoring: SMA (F), 50 ohms
- Frequency range RF-band
  - C-band 5.85 – 6.65 GHz
  - Ku-band 12.75 – 13.25 GHz
  - Ku-band 13.75 – 14.50 GHz
  - DBS band 17.30 – 18.10 GHz
  - DBS band 17.60 – 18.4 GHz

10 MHz reference input / output

- Connector: BNC (F), 50 ohms
- Input level: -3dBm up to 7dBm
- Output level: +7dBm
- Stability: ±5x10^{-8} over 0°C to 70°C

BUC power and reference frequency (optional)

- Max. current: 1,5 A
- Voltage: 24V
- Frequency: 10 MHz
- Stability: ±5x10^{-8} over 0°C to 70°C

Channel characteristics

Gain

- Programmable IF gain: -15 to 20dB
- IF gain step size: 0.1 dB
- Programmable L-band gain: -20 to +20dB
- L-band gain step size: 0.1dB
- Programmable RF gain (C&Ku): -20 to +20 dB(±5dB)
- Programmable RF gain (DBS): -10 to +30 dB
- RF-band gain step size: 0.1dB
- Gain variation over 36/72 MHz BW (L-band): 1.2 dB peak-to-peak
- Gain variation over 36/72 MHz BW (RF): 2.6 dB peak-to-peak

Linearity

- Output 1dB compression (L-band): +10dBm
- Output 1dB compression (C & Ku-band): +0 dBm
- Output 1 dB compression (DBS-band): +10dBm
- Third order intermod: <-60 dBc (typical)
- Third order intercept (L-band): +26dBm
- Third order intercept (C & Ku-band): >+10 dBm
- Third order intercept (DBS-band): >+20dBm
- AM/PM conversion (L-band): 0.1°/dB max@0dBm

Switching

- Spectrum inversion: Selectable
- Output switching suppression: <-80 dBm

Noise

- Noise figure: <20 dB (typical)
- In-band spurious: <-65 dBc (@ -10 dBm output level and for rates > 200 Kbaud)
- Phase noise

	L-band	RF
@ 10 Hz	<-50 dBc/Hz	<-35 dBc/HZ
@ 100 Hz	<-70 dBc/Hz :	<-60 dBc/Hz
@ 1KHz	<-80 dBc/Hz	<-75 dBC/Hz
@ 10 KHz	<-85 dBc/Hz	<-85 dBc/Hz
@ 100 KHz	<-95 dBc/Hz	<-95 dBc/Hz

- Group delay:

	@ 72 MHz BW	@ 36 MHz BW
Linear group delay	0.05 ns/MHz	0.03 ns/MHz
Parabolic group delay	0.0035 ns/MHz^2	0.01 ns/MHz^2
Residual group delay	1 ns peak-to-peak	1 ns peak-to-peak

Internal Reference frequency

High Stability: Stability ±5x10^{-8} over 0°C to 70°C
Ageing: ± 15 ppb/day
± 300 ppb/year

Very High Stability (optional)
Stability ±2x10^{-9} over 0°C to 65°C
Ageing: ± 0.5 ppb/day
± 500 ppb/10 year

Generic

Monitor and control Interfaces

- Web based GUI
- Diagnostics report, alarm log
- RMCP over TCP-IP/UDP and RS232/RS485
- SNMP v2c

Alarm Interface

- Electrical dual contact closure alarm contacts
- Connector 9-pin sub-D (F)
- Logical interface and general device alarm

Available Alarms

- 10 MHz alarm
- Power supply alarm
- Temp. alarm
- Synthesizer out-of-lock
- Input Overload warning (adjustable threshold)
- Input underload alarm (adjustable threshold)

Physical

- 1RU, width: 19", depth 51 cm, 6 kg
- Power supply: 90-130 & 180-260 Vac, 105 VA, 47-63 Hz
- Temperature
  - Operational: 0°C to 40°C
  - Storage: -40 to +70°C
- Humidity: 5% to 85% non-condensing
- CE label

Ordering information

AZ 710 Upconverter		Order n°
Default Configuration		
IF 70MHz or 140MHz to L-band Upconverter, SNMP Upconverter output: L-band (950 - 1750MHz) 10MHz reference In/Out High satbility		AZ710
Configuration options Category	Max. 1 option per category	
Output Interface	L-band (950 - 1750 MHz)	Default
	L-band + 10MHz for BUC	FA-02
	L-band + 10MHz + 24Vdc for BUC	FA-03
	L+C-band (5,85 - 6,65 GHz)	FA-04
	L+Ku-band (12,75 - 13,25 GHz)	FA-05
	L+Ku-band (13,75 - 14,50 GHz)	FA-06
	L+DBS-band (17,30-18,10 GHz)	FA-07
	L+DBS-band (17,60-18,40 GHz)	FA-08
10MHz reference In/ Out	High stability	Default
	Very high stability	GR-02
Services Category		
Assistance	Care Pack Basic	GA-06
	Care Pack Extended	GA-07

- Other configurations and options, such as RF-band amplifiers and L-band splitters, are available on request.
- Contact your sales representative for details (sales@newtec.eu)